Radiological Facilities Management

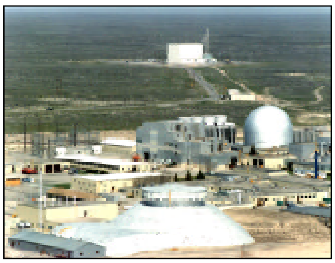
January 2002

Background

The Office of Nuclear Energy, Science and Technology's (NE's) Radiological Facilities Management program maintains critical user facilities in a safe, secure, environmentally compliant and cost-effective manner to support national priorities. The Radiological Facilities Management program comprises the Department's vital resources and capabilities at NE-managed facilities at Argonne National Laboratory-West (ANL-W), Idaho National Engineering and Environmental Laboratory (INEEL), Oak Ridge National Laboratory (ORNL), Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), Brookhaven National Laboratory (BNL), and the Mound Plant in Ohio.

Argonne National Laboratory-W

At ANL-W, the Radiological Facilities Management program supports meeting National Energy Policy goals by maintaining and operating important facilities required for advanced nuclear energy technology research and development. Key activities conducted under this program include maintaining essential facilities; safely and securely managing all special nuclear materials; responsibly managing and disposing of legacy materials generated by past DOE nuclear energy activities; and deactivating unneeded facilities. The facilities and infrastructure at the ANL-W site support several important DOE nuclear energy, defense, and environmental management programs, with NE's Spent Fuel Pyroprocessing and Transmutation program being the principal program at the site. The significant facilities at ANL-W include the Hot Fuel Examination Facility (HFEF), Fuel Conditioning Facility (FCF), Fuel Manufacturing Facility (FMF), Experimental Breeder Reactor-II (EBR-II), Sodium Process Facility (SPF), Analytical Laboratory (AL), Electron Microscopy Laboratory (EML), and Radioactive Scrap and Waste Facility (RSWF). These facilities are supported by several other nuclear, radiological, and industrial support and office facilities.



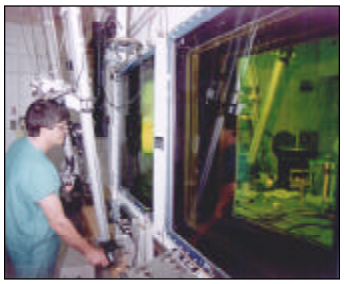
Idaho National Engineering and Environmental Laboratory

At INEEL, this program maintains the essential Test Reactor Area facilities required to achieve the objectives of the National Energy Policy and national security goals of the U.S. Since the early 1950s, test reactors, laboratories, hot cells and supporting facilities have been built and operated at this site. The only reactor currently operating at this site is the Advanced Test Reactor (ATR), which is the responsibility of and operated by the Office of Nuclear Energy, Science and Technology. The principal user of the ATR is the Office of the Deputy Administrator for Naval Reactors within the Department's National Nuclear Security Administration. The ATR is vital to achieving the Department's Strategic Plan's National Nuclear Security Objective NS5 - providing the U.S. Navy with safe, militarily effective nuclear propulsion plants and ensuring their continued safe and reliable operation. ATR currently conducts virtually all irradiation testing of Navy reactor fuels. In addition, other facilities operating on the site include: the ATR Critical Facility, which is used to verify core loading with new experiments; the Nuclear Materials Inspection and Storage Facility, which receives, inspects, and stores new ATR fuel until needed; the TRA Hot Cells where vital isotopes for medicine and industry that are produced in the ATR and some experiments that have been irradiated in the ATR are processed and shipped; the INEEL Applied Engineering and Development Laboratory; Office of Science's Safety and Tritium Applied Research (STAR) Facility for fusion fuel research; and a major industrial machine shop facility that supports not only TRA facilities, but also performs support work for all of INEEL. Vital nuclear reactor testing, isotope production, fusion energy research, and numerous other scientific research projects are planned to continue at the Test Reactor Area until well into the 21st century.

Oak Ridge National Laboratory

At ORNL, the Radiological Facilities Management program maintains the unique infrastructure for iridium fabrication in a safe, secure, environmentally compliant and cost-effective

manner. These facilities provide the capability to support radioisotope power systems for upcoming space and national security applications. The Department is maintaining the option to produce Pu-238 domestically to enable the Department to continue its support for key national security activities. The Department completed an evaluation of potential sites where this capability could be established and issued a Record of Decision in January 2001, that would provide for the reestablishment of a domestic Pu-238 production capability at facilities at ORNL and INEEL. Building 3047 Hot Cells are maintained in a safe and environmentally compliant mode to process and package the radioisotopes produced at the High Flux Isotope Reactor (HFIR). Isotope products made at this facility include: tungsten-188, rhenium-186, californium-252, and iridium-192. One of the cells in Building 3047 has been modified to accommodate processing alpha emitting isotopes.



The calutron building houses chemical and materials laboratories for processing and forming enriched stable isotopes. The materials laboratory performs a wide variety of metallurgical, ceramic, and high vacuum processing techniques. The chemical laboratory performs scraping, leaching, dissolving, oxidizing processes to remove unwanted materials and to place the isotope into a "chemically stable" form.

Los Alamos National Laboratory

At LANL, this program maintains the Pu-238 Processing Facilities in the Plutonium Facility-4 at Technical Area-55, including a Pu-238 scrap recovery line to recycle scrap Pu-238, in an operational, safe, and environmentally compliant mode. These facilities provide the capability to support radioisotope power systems for upcoming space and national security applications. In FY 2003 the construction of the Los Alamos Isotope Production Facility will be completed. Commissioning and startup activities, begun in FY 2002, will enable isotope production of short-lived medical and scientific isotopes to begin in FY 2004. Once in operation, the new 100 MeV Isotope Production Facility (IPF) at LANL will use the proton beam of the Los Alamos Neutron Science Center (LANSCE) Linear Accelerator. The TA-48 Hot Cell, Building RC-1, is maintained in a safe and environmentally compliant condition and state of readiness for the processing, packaging, and shipment of radioisotopes. Three major products produced at the site are used for Positron Emission Tomography (PET) scanners, cardiac PET imaging, and neurological research.

Brookhaven National Laboratory; Mound Plant, Ohio; and Sandia National Laboratories

The Radiological Facilities Management program also maintains several other facilities. At the Mound Plant, the heat source and power system assembly and testing facilities are used for radioisotope power systems. The Brookhaven Linear Isotope Producer (BLIP) Building 931, and Hot Cell Building 801 at BNL are used for producing, processing and packaging radioisotopes such as strontium-82, germanium-68, copper-67, and others that are used in medical diagnostic applications. A conceptual design report has been developed for a dedicated isotope production 70 MeV cyclotron at BNL and the Department proposes to proceed with pre-Title I engineering and design activities. The Annular Core Research Reactor (ACRR) and associated hot cells at SNL are available for isotope production and to perform services for other DOE programs.

Program Budget
Radiological Facilities Management
($ in Millions)

	FY 2001 Appropriation	FY 2002 Appropriation	FY 2003 Request
ANL-W	$ 31.207	$ 32.857	$ 31.615
INEEL	8.733	10.733	11.155
ORNL	12.385	11.050	10.500
LANL	14.882	14.922	15.268
BNL	2.000	1.800	1.850
Mound	10.045	10.050	10.450
SNL	2.200	1.700	1.850

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